

REMARKS

Reconsideration and withdrawal of the objections to and rejections of this application are respectfully requested in view of the amendment and remarks which place the application into condition for allowance.

Claims 16-19 and 21-27 are pending and at issue. Claims 17, 18, 22 and 23 are amended, and new claims 26 and 27 added, without prejudice.

No new matter is added.

It is submitted that these claims are patentably distinct from the references cited in the Office Action, and that these claims are in full compliance with the requirements of 35 U.S.C. §112. The amendments to the claims and remarks made herein are not made for the purpose of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112; but rather the amendments and remarks are made simply for clarification and to round out the scope of protection to which Applicants are entitled. Support for new claim 26 is found throughout the specification and from the pending claims. More specifically, support for new claim 26 is found on page 4, lines 31-34 in the specification and from claim 16. Support for new claim 27 is found on page 5, lines 1-2.

The specification stands objected for informalities (Office Action, at pages 3-4). Specifically, it is alleged that the specification does not disclose the conditions under which intrinsic viscosity is determined and also does not define the DIN 53461-B standard or the experimental conditions under which the HDT is determined. The objections are traversed.

Applicants respectfully reiterate that a skilled artisan would know how to determine intrinsic viscosity and HDT and it would not require undue experimentation to do so. Further, Applicants previously submitted an English-translation of DIN 53461-B (April 12, 2001

Amendment) to remedy any perceived deficiencies in the specification. It is verily believed that nothing more is required.

Consequently, reconsideration and withdrawal of the objections to the specification and respectfully requested.

Claims 17-19 and 21-25 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The rejection is traversed.

A claim is definite if the scope of the subject matter embraced by a claim is clear and if the applicant has not otherwise indicated that he intends the claims to be of a different scope. *In re Borkowski*, 164 U.S.P.Q. 642 (C.C.P.A. 1970). The “distinctly claim” requirement of 35 USC § 112, second paragraph, means that the claims must have a clear and definite meaning when construed in light of the complete patent document. *Standard Oil Co. v. American Cyanamid Co.*, 227 U.S.P.Q. 293 (Fed. Cir. 1985). The test of definiteness is whether one skilled in the art would understand the scope of the claim when read in light of the specification. *Morton Int. Inc. v. Cardinal Chem. Co.*, 28 U.S.P.Q.2d 1190 (Fed. Cir. 1993). The degree of precision necessary is a function of the subject matter claimed. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 94-95 (Fed. Cir. 1986). Indeed, the Federal Circuit noted in *Hybritech* that:

‘[I]f the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more’ [and] the claims are clearly definite.

Id. at 94 (citing to *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, 225 U.S.P.Q. 634, 641 (Fed. Cir. 1985)) (emphasis added).

Applying the law to the instant facts, as the instant claims, read in light of the specification, apprise a skilled artisan of both the utilization and scope of the invention, and as the language is as precise as the subject matter permits, the instant claims are definite. A contrary conclusion, as posited by the Office Action, would not only be against public policy, but also impermissible as a matter of law. *Hybritech*, 231 U.S.P.Q. at 95 (“As a matter of law, no court can demand more.”).

More specifically, with respect to the alleged lack of disclosure concerning the conditions under which the intrinsic viscosities and heat distortion temperature are determined, Applicants reiterate their position that the issue is not that standards can change over time (as asserted in the Office Action) but what did a skilled artisan know at the time of filing. The law is very clear that an Examiner must inquire as to the knowledge of the skilled artisan at the time of filing of the application. See *In re Epstein*, 32 F.2d 1559, 1564 (Fed. Cir. 1994) (“The time relevant to the level of skill inquiry is when the application was filed[.]”); see also, *Graham v. John Deere*, 383 U.S. 1, 17, (1996) (finding that skill level is measured at the time the invention was made). Applicants respectfully assert again that a skilled artisan, at the time of filing of the instant application, would readily understand that measurement of the viscosity are routinely determined by the standards set forth in the specification and would, in turn, know which standard to use and what experimental conditions to apply. A skilled artisan would, consequently, not be required to perform any undue experimentation in order to practice the instantly claimed invention in general, or to calculate the intrinsic viscosity of the polyolefin or determine the HDT in particular.

Further still, it is common practice to recite DIN standards in both the claims and the specification. Patents issued with the DIN standard include U.S. Patent Nos. 6,346,572,

6,361,643, 6,351,102, and 6,347,252. Indeed, a search of the patent database on the USPTO website found 506 patents reciting a DIN standard from 1996 to 2002 alone.

The Office Action further asserts that the specification fails to define the version of the DIN53461 standard. As noted above, however, a skilled artisan would, by definition, know how to determine the HDT, or for that matter, intrinsic viscosity, and know the experimental protocol and conditions necessary to achieve it. Further still, claims 17 and 18 have been amended to recite the priority date of the present application (August 2, 1995) as the version of the DIN53461 standard used, thereby rendering the instant rejection moot. Consequently, any hypothetical change of, or revisions to, DIN 53461 would be irrelevant because, at the time of the filing of the instant application (i.e., the August 2, 1995 priority date), a skilled artisan would readily understand that DIN 53461 (which is also readily available to a skilled artisan) could be used to practice the instantly claimed invention.

With respect to the rejection of claim 19 as being allegedly unclear as to the recitation of the Mw/Mn ratio, said ratio can refer to either the low viscosity or high viscosity resin. (Specification, at pages 5-6).

With respect to the rejections of claims 22 and 23, the amendments to claims 22 and 23 render the rejections moot.

In view of the foregoing, reconsideration and withdrawal of the rejections under 35 U.S.C. §112, second paragraph, and favorable consideration of the pending claims are respectfully requested.

Claims 17-25 were rejected under 35 U.S.C. §112, first paragraph, as allegedly not being enabled. Specifically, the Office Action alleges that the specification does not recite

the experimental parameters for determining HDT and intrinsic viscosity, thereby requiring undue experimentation. Applicants respectfully disagree.

It is respectfully pointed out "the laws do not require a specification to be a blueprint in order to satisfy the requirement for enablement under 35 U.S.C. §112". *Staehelin v. Secher*, 24 U.S.P.Q.2d 1513, 1516 (Bd. Pat. App. & Int. 1992). Indeed, a specification need not disclose — and best omits — that which is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 U.S.P.Q.2d 1331, 1332 (Fed. Cir. 1991).

It is respectfully submitted that the assertion in the Office Action that undue experimentation is required to practice the instantly claimed invention is inaccurate. The Examiner is respectfully invited to review *In re Wands*, 8 U.S.P.Q. 2d 1400 (Fed. Cir. 1988), wherein the Federal Circuit stated at 1404 that:

Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation.

'The key word is undue, not experimentation.' The determination of what constitutes undue experimentation in a given case requires the application of standard of reasonableness, having due regard for the nature of the invention and the state of the art. The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed ... [Citations omitted].

Against this background, determining whether undue experimentation is required to practice a claimed invention turns on weighing the factors summarized in *In re Wands*. These factors include, for example, (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples of the invention; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the

claims; all of which must be taken into account.

Applying the law to the instant facts, it is clear that enablement exists.

Applicants' invention is clearly enabled because a skilled artisan, at the time of filing of the instant application, would readily understand that measurement of intrinsic viscosity and HDT are routinely determined by the standards set forth in the specification and would, in turn, know which standard to use and what experimental conditions to apply. A skilled artisan would, consequently, not be required to perform any undue experimentation in order to practice the instantly claimed invention in general, or to calculate the intrinsic viscosity of the polyolefin or HDT in particular. Predictability in the art did exist at the time of filing and, coupled with the knowledge of a skilled artisan and the guidance of the present application, there is sufficient evidence that Applicants' disclosure does satisfy the enablement requirement.

Consequently, reconsideration and withdrawal of the 35 U.S.C. §112, first paragraph, rejections are respectfully requested.

Claims 16 and 22-25 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Japanese Patent No. 2-184864 ("JP '864") in combination with page 13 of *Grant & Hackh's Chemical Dictionary* (5th Ed.) and page 169 of *Handbook of Imaging Materials*; and claims 16 and 21-23 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. 5,817,843 to Masuda (" '843 patent") combined with U.S. 5,741,617 to Inaba (" '617 patent") and U.S. 5,179,171 to Minami (" '171 patent"). These Section 103 rejections will be addressed collectively and are traversed. None of the cited documents, either alone or in combination, teach, disclose, suggest or motivate a skilled artisan to practice the instant invention.

The present invention teaches, *inter alia*, a toner for developing an electrostatically charged image of a heat roller type copier or printer, the toner according to the present invention consisting essentially of a binder resin, a colorant and a charge control agent, wherein the binder resin includes a polyolefin resin having a cyclic structure. The polyolefin resin in accordance with the present invention is a copolymer derived from an alpha-olefin, an alicyclic compound having a double bond and, optionally, a diene monomer.

One feature of the claimed invention is the presence of a specific binder resin, i.e., a polyolefin having a cyclic structure and derived from an alpha-olefin, an alicyclic compound and, optionally, a diene monomer. Typical examples of alpha-olefins are ethylene or propylene, i.e., non-cyclic hydrocarbons having a double bond in the alpha-carbon position. Typical examples of alicyclic compounds are cyclohexene and norbornene, i.e, cyclic hydrocarbons having a double bond in the ring system.

JP '864, on the other hand, does not teach, disclose or suggest binder resins derived from an alpha-olefin and an alicyclic compound. Instead, JP '864 relates to a developer containing a cyclopentadiene-based polymer with no recitations that would motivate a skilled artisan to practice the instantly claimed alpha-olefins. Further, the compounds recited in JP '864 would not motivate or lead a skilled artisan to practice the instant invention. To wit, the copolymers discussed in JP '864 are highly complex and different from the alpha-olefins and alicyclic compounds recited in the instant claims. There is no suggestion or motivational teaching that would enable one skilled in the art to develop a toner having a polyolefin resin with a cyclic structure wherein the polyolefin resin is a co-polymer derived from at least an alicyclic compound having a double bond and an alpha-olefin. Further, the polymers recited in JP '864 are produced via radical polymerization, while the instantly used binder resins are prepared by,

for instance, a polymerization method using metallocene catalysts or Ziegler catalysts (Specification, at page 5, lines 1-2).

Neither *Grant & Hackh's Chemical Dictionary* nor the *Handbook of Imaging Materials* remedy the inherent deficiencies in JP '864. More specifically, a skilled artisan would readily understand that a polarity control agent is not the same as a charge control agent. A charge control agent ensures stable charge; a polarity control agent does not. Further, the requisite motivation to combine these documents is absent.

Turning to the remaining documents, the '843 patent relates to a quinizarin compounds for dyes; the '617 patent relates to toners having a binder resin, a colorant and a wax composition; and the '171 patent relates to a random copolymer and synthetic waxes. The instant invention, on the other hand, does not use waxes and it is inappropriate to ground the rejection on such disparate references. Applicants respectfully reiterate that waxes are not binder resins. There is no suggestion, disclosure or motivation that would lead a skilled artisan to practice the instantly claimed invention utilizing the recited copolymers. Further, there is no motivation to combine these disparate documents as the '171 patent distinguishes between low molecular weight copolymers (synthetic waxes, col. 15, line 59) and high molecular weight polymers (col. 16, line 5).

It is urged that none of these documents, either alone or in any combination, disclose, suggest, or motivate a skilled artisan to practice the presently claimed invention. In order to ground an obviousness rejection, there must be some teaching which would have provided the necessary incentive or motivation for modifying the reference's teaching. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063

(B.P.A.I. 1993). Further, “obvious to try” is not the standard under 35 U.S.C. §103. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). And, as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification.” Also, the Examiner is respectfully reminded that for the Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants’ disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988).

In each of the references relied upon in the Office Action, the requisite suggestion or motivation is lacking. More specifically, and with reference to the ‘843 patent, Applicants assert that the reference is inappropriate as evidence of obviousness. First, a skilled artisan would not be motivated to practice the instantly claimed cyclic olefin copolymer from the ‘843 patent’s alleged disclosure of an alicyclic hydrocarbon resin. A skilled artisan would consider a cyclic olefin copolymer to be distinguishable from an alicyclic hydrocarbon. Second, even assuming, *arguendo*, the ‘843 patent discloses that a binder resin can be any binder resin known in the art, that still does not satisfy the legal standard promulgated by the Federal Circuit. It is well-known that a genus disclosed in a reference does not render obvious a species, absent a suggestion or motivation that would disclose to a skilled artisan the desirability of practicing the species. See *In re Jones*, 958 F.2d 347 (Fed. Cir. 1992). Such a suggestion or motivation is lacking because the ‘843 patent, *inter alia*, fails to disclose, motivate, teach or suggest the instantly claimed cyclic olefin copolymers.

Further, neither the ‘617 or ‘171 patents remedy the inherent deficiencies of the ‘843 patent. To wit, both the ‘617 and ‘171 patents relate to waxes. Again, a skilled artisan

would not consider a “wax” to be a “binder resin.” Specifically, the ‘617 patent is directed to “toner particles contain[ing] inside the particle a wax composition containing ester wax” (col. 4, lines 32-34). Similarly, the ‘171 patent is directed to “synthetic waxes” applicable to a laundry list of uses (col. 15, line 53 to col. 16, line 5). The present invention, on the other hand, is not directed to waxes and it is inconceivable that the Office Action can come to a different conclusion. Indeed, the ‘617 and ‘171 patents teach away from Applicants’ invention because a skilled artisan would readily know that when a wax is used as a binder for a toner, adherence of the toner to the substrate (such as paper) is achieved by cold pressure fixing. By contrast, Applicants’ invention is directed to a toner for developing an electrostatically charged copier or printer image consisting essentially of a binder resin, a colorant and a charge control agent, wherein the image is fixed by a heat roller fixing means. As no combination of the ‘843, ‘617 and ‘171 patents could lead a skilled artisan to achieve the instantly claimed invention, the rejection is fatally defective.

Accordingly, reconsideration and withdrawal of the Section 103 rejections based on the preceding documents, either alone or in any combination, are respectfully requested.

REQUEST FOR INTERVIEW

If any issue remains as an impediment to allowance, an interview with the Examiner is respectfully requested, prior to issuance of any paper other than a Notice of Allowance; and, the Examiner is respectfully requested to contact the undersigned to arrange a mutually convenient time and manner for such an interview.

CONCLUSION

In view of the remarks and amendments herewith and those of record, the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance, or an interview at a very early date with a view to placing the application in condition for allowance, are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 17, 18, 22 and 23 have been amended as follows:

17. (Amended Twice) A toner for developing an electrostatically charged copier or printer image, the toner consisting essentially of:

- a) a binder resin;
- b) a colorant; and
- c) a charge control agent,

the binder resin further comprises a polyolefin resin having a cyclic structure having:

(i) a low-viscosity resin with a number average molecular weight (Mn) of 1000 to 7500 and a weight average molecular weight (Mw) of 1,000 to 15,000, as measured by GPC, an intrinsic viscosity (i.v.) of less than 0.25 dl/g, and a heat distortion temperature (HDT) by DIN53461-B (August 2, 1995) of lower than 70°C; and

(ii) a high-viscosity resin having a number average molecular weight of at least 7,500 and a weight average molecular weight of at least 15,000, as measured by GPC, an i.v. of 0.25 dl/g or more, and an HDT of 70°C or higher;

wherein the polyolefin resin is a copolymer derived from an alpha-olefin, an alicyclic compound having a double bond and, optionally, a diene monomer, and wherein the electrostatically charged copier or printer image is fixed using a heat roller fixing means.

18. (Amended Twice) A toner for developing an electrostatically charged copier or printer image, the toner consisting essentially of:

- a) a binder resin;
- b) a colorant; and
- c) a charge control agent,

the binder resin further comprises a polyolefin resin having a cyclic structure having:

- (i) a low-viscosity resin having a number average molecular weight (M_n) of 3,000 to 7,500 and a weight average molecular weight (M_w) of 4,000 to 15,000, as measured by GPC, an intrinsic viscosity (i.v.) of less than 0.25 dl/g, and a heat distortion temperature (HDT) by DIN53461-B (August 2, 1995) of lower than 70°C, and
- (ii) a high-viscosity resin having a number average molecular weight of 7,500 to 50,000 and a weight average molecular weight of 15,000 to 100,000, as measured by GPC, an i.v. of 0.25 dl/g or more, and an HDT of 70°C or higher;

wherein the polyolefin resin is a copolymer derived from an alpha-olefin, an alicyclic compound having a double bond and, optionally, a diene monomer, and wherein the electrostatically charged copier or printer image is fixed using a heat roller fixing means.

22. (Amended Twice) The toner according to claims 16, 17 or 18, wherein the binder resin includes [a] said polyolefin resin with a cyclic structure having an intrinsic viscosity (i.v.) of 0.25 dl/g or more, a heat distortion temperature (HDT) by DIN53461-B (August 2, 1995) of 70°C or higher, and a number average molecular weight of 7,500 or more and a weight average molecular weight of 15,000 or more, as measured by GPC, which is contained in a proportion of less than 50% by weight based on the entire binder resin.

23. (Amended Twice) The toner according to claims 16, 17 or 18, wherein the binder resin consists of 1 to 100 parts by weight of [a] said polyolefin resin having a cyclic structure, and 0 to 99 parts by weight of at least one resin selected from the group consisting of polyester resins, epoxy resins, polyolefin resins, vinyl acetate resins, vinyl acetate copolymer resins, acrylate resins [or] and styrene-acrylate resins.